

**Application No.: 10/764,602**

**Amendment to the Drawings:**

Figure 1 has been amended to correct the margins, as in the attached Replacement Sheet.

**REMARKS**

This Amendment is filed in response to the Office Action dated February 23, 2006. This application should be allowed and the case passed to issue. No new matter is raised by this amendment. The amendment to claim 1 is supported by originally filed claim 6. New claim 26 is supported by originally filed claims 1, 8, and 13.

Claims 1-3, 5, and 7-26 are pending in this application. Claims 1-13 have been rejected. Claim 4 was objected to. Claims 14-25 were withdrawn pursuant to a restriction requirement. Claims 1 and 8 have been amended. Claims 4 and 6 have been canceled. Claim 26 is newly added.

***Restriction***

Reconsideration of the restriction requirement is respectfully requested. The intermediate-final product grounds for restriction is improper. Groups I and II of the instant claims are related as subcombination and combination. As explained in MPEP § 806.05(j), in an intermediate-final product relationship the intermediate typically loses its identity. The fact that the intermediate does not lose its identity in the instant claims, is no "mere" fact as alleged by the Examiner, but a rather an important fact. As further explained in MPEP § 806.05(j), "an intermediate product and a final product can be shown to be distinct inventions if the intermediate and final products are mutually exclusive inventions (not overlapping in scope). . . ." Claim 17 contains all the limitations of claim 1 and thus, is overlapping in scope. Clearly, these claims are not related by intermediate-final product, according to the United States Patent Office's examining guidelines.

Upon the allowance of generic claim 1, Applicants request examination and allowance of the additional species readable thereon.

***Drawings***

The drawings were objected to because the margins on page 1 appear to be incorrect.

In response to this objection, Fig. 1 has been amended to correct the margins.

A REPLACEMENT SHEET containing amended Fig. 1 is attached to this response.

***Obviousness Double Patenting***

Claims 1-13 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of copending Application No. 10/765,208. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The Examiner acknowledged that the claims of the '208 application do not claim the relative interfacial energies as in claim 1 or the surface energies as in claim 2 of the present claims. The Examiner, however, deemed that the embodiments of claim 7 of the '208 application would inherently meet the claimed property limitations.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). "Inherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999)(citations omitted). While there is some overlap in the materials listed in claim 7 of the '208 application and claims 7 and 8 of the present application, it is noted that a number of the materials listed in claim 7 for the second crystalline layer have melting points less than about 2100 °C. Therefore, the material for the second crystalline layers of the '208 application would not inherently meet the limitations of the instant claims.

***Claim Objections***

Claim 4 is objected to as being of improper dependent form.

This objection is moot, as claim 4 has been canceled.

***Claim Rejections Under 35 U.S.C. § 112***

Claims 1-13 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

The Examiner asserted that the term "strong" in claim 1 is a relative term that is not defined by the claims and the specification does not provide a standard for ascertaining the requisite degree. This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

As explained in the specification at page 17, lines 2-7, the claim limitation "'strong preferred growth orientation' refers to films which are oriented in a single direction and the integrated intensity of the largest peak (as determined by X-ray analysis) of the family of planes of the specified orientation is at least or about 5 times greater than any other observed peak. In addition, the expression 'strong preferred growth orientation' generally implies an X-ray rocking curve FWHM less than or about 10 degrees."

Applicants submit that the claims fully comport with the requirements of 35 U.S.C. § 112.

***Claim Rejections Under 35 U.S.C. § 102***

Claims 1-13 were rejected under 35 U.S.C. § 102(b) as being anticipated by Lambeth et al. (WO 99/24973). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the invention as claimed, and the cited prior art.

An aspect of the invention, per claim 1, is a layer structure for crystallographically orienting a layer of a hexagonal close-packed (*hcp*) material formed thereon, comprising in

overlying sequence: (a) a first crystalline layer of a material having a first lattice parameter and a strong preferred growth orientation, (b) a second crystalline layer of a material having a second lattice parameter and the same strong preferred growth orientation as the first crystalline layer, and (c) a third crystalline layer of a *hcp* material having a lattice parameter similar to or different from the second lattice parameter of the second crystalline layer and a strong preferred growth orientation. The second crystalline layer has a lower interfacial energy with the first crystalline layer and a higher interfacial energy with the third crystalline layer, owing to a lower surface energy of the first crystalline layer and a higher surface energy of the second crystalline layer. The second crystalline layer has a melting temperature ( $T_m$ ) not less than about 2,100 °C.

The Examiner averred that Lambeth et al. disclose a layer structure for crystallographically orienting a layer of *hcp* material formed thereon comprising a first crystalline layer of Ag or Cu, a second crystalline layer of Ti, and third crystalline layer of CoCrPt.

Lambeth et al. do not disclose the claimed layer structure because Lambeth et al. do not disclose a second crystalline layer having a melting temperature ( $T_m$ ) not less than about 2,100 °C, as required by claim 1. As acknowledged by the Examiner, the melting point of Ti is 1670 °C.

As regards new claim 26, Lambeth et al. do not disclose the claimed layer structure because Lambeth et al. do not disclose that the second crystalline layer comprises an *hcp* material, the third crystalline layer comprises a different *hcp* material, and the second crystalline layer comprises at least one material selected from the group consisting of: Ru, Re, Ir, Os, Co, Pt, Hf, Th, Gd, Mo, Nb, Ta, W, and alloys thereof, as required by claim 26.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the disclosure in a single reference of each element of a claimed invention. *Helifix Ltd. v. Blok-Lok*

*Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 399, 36 USPQ2d 1101 (Fed. Cir. 1995); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). Because Lambeth et al. do not disclose a second crystalline layer having a melting temperature ( $T_m$ ) not less than about 2,100 °C, as required by claim 1; and do not disclose that the second crystalline layer comprises an *hcp* material, the third crystalline layer comprises a different *hcp* material, and the second crystalline layer comprises at least one material selected from the group consisting of: Ru, Re, Ir, Os, Co, Pt, Hf, Th, Gd, Mo, Nb, Ta, W, and alloys thereof, as required by claim 26; Lambeth et al. do not anticipate claims 1 and 26.

Applicants further submit that Lambeth et al. do not suggest the claimed layer structure for crystallographically orienting a layer of a hexagonal close-packed material formed thereon.

The dependent claims are allowable for at least the same reasons as independent claim 1 and further distinguish the claimed layer structure.

In view of the above amendments and remarks, Applicants submit that this case should be allowed and passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

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including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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